

## REMARKS ON DR. DALL'S PAPER.

By R. BULLEN NEWTON, F.G.S.

*Read 10th December, 1915.*

IN this paper Dr. Dall replies to a criticism made by M. Cossmann (*Revue Critique de Paléozoologie*, 1915, p. 119) on his "Monograph of the Molluscan Fauna of the *Orthaulax pugnax* zone of the Oligocene of Tampa, Florida", M. Cossmann being in favour of regarding the Tampa beds as of Miocene instead of Oligocene age. Both authors agree, however, that they belong to the Aquitanian stage of the Tertiary series, so that the chief point for discussion is whether the Aquitanian horizon is to be correlated with the Oligocene or the Miocene. M. Cossmann urges that the absence of *Megatylotus crassatina* in the Tampa beds is against their being referred to the Oligocene, although in support of this view a better reason, I think, might have been advanced from the fact that no Nummulites are found in those deposits. It has been long recognized that Nummulites died out at the end of Oligocene times, being replaced by Lepidocycline Foraminifera in the succeeding Aquitanian and later stages of the Miocene period, and hence European stratigraphists have favoured the Aquitanian being regarded as the oldest Miocene. Dr. Dall appears to have misunderstood the true horizon of the naticoid shell referred to by M. Cossmann as *Megatylotus crassatina*, which is essentially Oligocene, and not known either in the Eocene or Miocene deposits of Europe. This mollusc is more particularly characteristic of the Stampian or upper part of the Oligocene, being typical of certain beds of the Paris Basin known as the "Sables Supérieurs"; the species likewise occurs in similar deposits of England, having been recorded from the Hempstead Beds of the Isle of Wight (R. B. Newton, Syst. List British Oligocene and Eocene Mollusca, British Museum, 1891, p. 241).

It is to be regretted, as pointed out by Dr. Dall, that M. Cossmann is against the adoption of Boltenian names, which are now so widely accepted by conchologists.